



Source Water Assessment Program (SWAP) Report For Chilmark School

What is SWAP?

The Source Water Assessment Program (SWAP), established under the federal Safe Drinking Water Act, requires every state to:

- ? Inventory land uses within the recharge areas of all public water supply sources;
- ? Assess the susceptibility of drinking water sources to contamination from these land uses; and
- ? Publicize the results to provide support for improved protection.

SWAP and Water Quality

Susceptibility of a drinking water source does *not* imply poor water quality. Actual water quality is best reflected by the results of regular water tests.

Water suppliers protect drinking water by monitoring for more than 100 chemicals, treating water supplies, and using source protection measures to ensure that safe water is delivered to the tap.

Prepared by the
Massachusetts Department of
Environmental Protection,
Bureau of Resource Protection,
Drinking Water Program

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Table 1: Public Water System (PWS) Information

PWS NAME	Chilmark School
PWS Address	State Road
City/Town	Chilmark Massachusetts
PWS ID Number	4062008
Local Contact	Sylvia Yeomans
Phone Number	(508) 645-2105

Well Name	Source ID#	Zone I (in feet)	IWPA (in feet)	Source Susceptibility
Well #1	4062008-01G	120	464	Moderate

Introduction

We are all concerned about the quality of the water we drink. Drinking water wells may be threatened by many potential sources of contamination, including septic systems, road salting, and improper disposal of hazardous materials. Citizens and local officials can work together to better protect these drinking water sources.

Purpose of this report:

This report is a planning tool to support local and state efforts to improve water supply protection. By identifying land uses within water supply protection areas that may be potential sources of contamination the assessment helps focus protection efforts on appropriate best management practices (BMPs) and drinking water source protection measures. Department of Environmental Protection (DEP) staff are available to provide information about funding and other resources that may be available to your community.

This report includes:

1. Description of the Water System
2. Discussion of Land Uses within Protection Area to as
3. Recommendations for Protection
4. Attachments, including a Map of the Protection Areas

1. Description of the Water System

The Chilmark School is a public water supply currently serving a population of 65 students and staff. The school is served by Well #1 that is located approximately 250 feet east of the school building in a wooded area. Well #1 is a 4-inch diameter well drilled to a final depth of 70 feet. The well is located in an aquifer with a high vulnerability to contamination due to the absence of hydrogeologic barriers (e.g. clay layer) that can prevent contaminant migration. Well #1 has a Zone I of 120 Feet and the Interim Wellhead Protection Area (IWPA) of 464 feet. The IWPA provides an interim protection area for a water supply well when the actual recharge area has not been delineated. The actual recharge area to the well may be significantly larger or smaller than the IWPA.

What is a Protection Area?

A well's water supply protection area is the land around the well where protection activities should be focused. Each well has a Zone I protective radius and an Interim Wellhead Protection Area (IWPA).

- **The Zone I** is the area that should be owned or controlled by the water supplier and limited to water supply activities.
- **The IWPA** is the larger area that is likely to contribute water to the well.

In many instances the IWPA does not include the entire land area that could contribute water to the well. Therefore, the well may be susceptible to contamination from activities outside of the IWPA that are not identified in this report.

What is Susceptibility?

Susceptibility is a measure of a well's potential to become contaminated due to land uses and activities within the Zone I and Interim Wellhead Protection Area (IWPA).

The well serving the facility has a cation resin type water softer and uses calcium carbonate to reduce corrosiveness of the water by raising the pH. For current information on monitoring results and treatment, please contact the Public Water System contact person listed above in Table 1.

2. Discussion of Land Uses in the Protection Areas

Zone I

The Well meets DEP's restrictions that only allow water supply related activities in Zone I. The Zone I protection area is located within a well easement granted to the town by the abutting property owner. The public water supplier controls all land encompassed by Zone I.

Recommendations:

- V Keep non-water supply activities out of the Zone I.
- V Do not use or store pesticides, fertilizers or road salt within the Zone I.

There are a number of land uses and activities within the drinking water supply protection areas that are potential sources of contamination.

Key issues include:

1. **An Aboveground Storage Tank (AST) without Secondary Containment,**
2. **Two (2) Aboveground Storage Tanks with Secondary Containment**
3. **Stormwater Catchbasin.**

The overall ranking of susceptibility to contamination for the well is Moderate, based on the presence of at least one Moderate threat land use or activity in the IWPA, as seen in Table 2.

1. **Aboveground Storage Tank (AST) Community Center**– There is an AST without secondary containment located behind the Community Center building. The AST is located within the IWPA of Well #1. Additionally, the AST is located in close proximity to the Community Centers own public water supply (public water supply ID# 4062006-01G and 02G) wells. If managed improperly, ASTs can be a potential source contamination due to leaks or spills of the chemicals they store.

Recommendations:

- V ASTs in your IWPA should be located on an impermeable surface, and also contained in an area large enough to hold the complete liquid volume, should a

Table 2: Table of Activities within the Water Supply Protection Areas

Potential Contaminant Sources	Zone I	IWPA	Threat	Comments
Fuel Storage Above Ground	No	Well #1	Moderate	Heating oil tank for community center
Parking lot, driveways & roads	No	Well #1	Moderate	Limit road salt usage and provide drainage away from wells
Athletic Field	No	Well #1	Moderate	Fertilizer and pesticide use
Septic System	No	Well #1	Moderate	Refer to septic systems brochure in the appendix
Fuel Storage Above Ground	No	Well #1	Low	Heating oil tank with secondary containment
Structures	No	Well #1	-	Non-water supply structures in IWPA

* -For more information on Contaminants of Concern associated with individual facility types and land uses please see the SWAP Draft Land Use / Associated Contaminants Matrix on DEP's website - www.state.ma.us/dep/brp/dws/.

Glossary

Zone I: The area closest to a well; a 100 to 400 foot radius proportional to the well's pumping rate. To determine your Zone I radius, refer to the attached map.

IWPA: A 400-foot to ½ mile radius around a public water supply well proportional to its pumping rate; the area DEP recommends for protection in the absence of a defined Zone I. To determine IWPA radius, refer to the attached map.

Zone II: The primary recharge area defined by a hydrogeologic study.

Aquifer: An underground water-bearing layer of permeable material that will yield water in a usable quantity to a well.

Hydrogeologic Barrier: An underground layer of impermeable material that resists penetration by water.

Recharge Area: The surface area that contributes water to a well.

spill occur.

- V Upgrade all oil/hazardous material storage tanks to incorporate proper containment and safety practices. Any modifications to the AST must be accomplished in a manner consistent with Massachusetts's plumbing, building, and fire code requirements. Consult with the local fire department for any additional local code requirements regarding ASTs.

2. **Above Storage Tanks in School Basement-** There are two (2) 320-gallons ASTs with secondary containment located within the basement of the Chilmark school

Recommendations:

- V During refilling of AST, ensure that the operator of the oil transport tanker does not leave the vehicle while the AST is being filled.
- V Ensure that the delivery operator has determined the tanks available oil capacity to prevent overfilling (refer to 527 CMR 8.00).
- V Consult with the local fire department for any additional local code requirements regarding USTs.

3. **Storm Water Catch Basin** – Catch basins transport storm water from the roadway and adjacent properties to the ground. As flowing storm water travels, it picks up debris and contaminants from streets, parking areas and lawns. Common potential sources of contamination include lawn chemicals, pet waste, leakage from dumpsters, household hazardous waste, and contaminants from vehicle leaks, maintenance, washing or accidents.

Recommendations:

- V Have the catch basins inspected, maintained, and cleaned on a regular schedule. Additionally, street and parking lot sweeping reduces the amount of potential contaminants in storm runoff.

Implementing the following recommendations will reduce the system's susceptibility to contamination.

3. Protection Recommendations

Implementing protection measures and best management practices (BMPs) will reduce

the well's susceptibility to contamination. Chilmark School should review and adopt the key recommendations above and the following:

Zone I:

- V Drinking water protection signs were not posted at the time of the SWAP site visit. the Department recommends posting drinking water protection signs a key visibility locations. Keep non-water supply activities out of the Zone I.
- V Monitor your water usage. Keep your total water consumption below the 2880 gallons per day to maintain compliance with the calculated Zone I and IWPA.
- V Prohibit public access to the well and pump house by locking facilities, and gating roads.
- V Conduct regular inspections of the Zone I. Look for illegal dumping, evidence of vandalism; check any above ground tanks for leaks, etc.
- V Do not use or store pesticides, fertilizers or road salt within

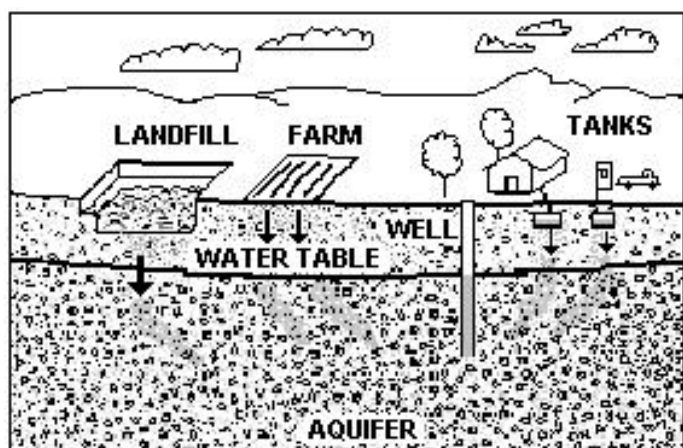


Figure 1: Example of how a well could become contaminated by different land uses and activities.

For More Information:

Contact Mark Dakers in DEP's Lakeville Office at (508) 946 - 2847 for more information and for assistance in improving current protection measures.

More information relating to drinking water and source protection is available on the Drinking Water Program web site at:

www.state.ma.us/dep/brp/dws/

Additional Documents:

To help with source protection efforts, more information is available by request or online at www.state.ma.us/dep/brp/dws/, including:

1. Water Supply Protection Guidance Materials such as model regulations, Best Management Practice information, and general water supply protection information.
2. MA DEP SWAP Strategy
3. Land Use Pollution Potential Matrix
4. Draft Land/Associated Contaminants Matrix

Copies of this assessment have been provided to the public water supplier, and town boards.

the Zone I.

Training and Education:

- ✓ Train staff on proper hazardous material use, disposal, emergency response, and best management practices; include custodial staff, groundskeepers, certified operator, and food preparation staff. Post labels as appropriate on raw materials and hazardous waste.
- ✓ Work with your community to ensure that stormwater runoff is directed away from the well and is treated according to DEP guidance.

Facilities Management:

- ✓ Implement standard operating procedures regarding proper storage, use and disposal of hazardous materials. To learn more, see the hazardous materials guidance manual at www.state.ma.us/dep/bwp/dhm/dhmpubs.html.
- ✓ Eliminate non-sanitary wastewater discharges to on-site septic systems. Instead, in areas using hazardous materials, discharge drains to a tight tank or sanitary sewer.
- ✓ Remove hazardous materials from rooms with floor drains that drain to the ground or septic systems.
- ✓ Floor drains in areas where hazardous materials or wastes might reach them need to drain to a tight tank, be sealed, or be connected to a sanitary sewer.
- ✓ Implement Best Management Practices (BMPs) for the use of fertilizer, herbicides and pesticides on facility property.
- ✓ Septic system components should be located, inspected, and maintained on a regular basis.
- ✓ Concrete pads should slope away from well and well casing should extend above ground.
- ✓ For utility transformers that may contain PCBs, contact the utility to determine if PCBs have been replaced. If PCBs are present, urge their immediate replacement. Keep the area near the transformer free of tree limbs that could endanger the transformer in a storm.

Planning:

- ✓ Work with local officials in Chilmark to include the Chilmark School IWPA in Aquifer Protection District Bylaws and to assist you in improving protection.
- ✓ Have a plan to address short-term water shortages and long-term water demands. Keep the phone number of a bottled water company readily available.
- ✓ Supplement the SWAP assessment with additional local information and incorporate it into water supply educational efforts. Use a land use inventory to assist in setting priorities, focusing inspections, and creating educational activities.

Funding:

The Department's Wellhead Grant Protection Program provides funds to assist public water suppliers in addressing Wellhead protection through local projects. Protection recommendations discussed in this document may be eligible for funding under the "Wellhead Protection Grant Program". For additional information, please refer to the attached program fact sheet. Please note: each program year the Department posts a new Request for Response for the Grant program (RFR). Other funding opportunities

are described in "Grant and Loan Programs: Opportunities for Watershed Protection, Planning and Implementation" at <http://www.state.ma.us/dep/brp/mf/files/glprgm.pdf>.

These recommendations are only part of your ongoing local drinking water source protection. Citizens and community officials should use this SWAP report to spur discussion of local drinking water protection measures.

4. Attachments

- Map of the Public Water Supply (PWS) Protection Area.
- Recommended Source Protection Measures Fact sheet
- Your Septic System Brochure
- Pesticide Use Fact sheet
- Fertilizer Use Fact sheet
- Healthy Schools Fact Sheet
- Wellhead Protection Grant Program Fact Sheet
- Source Protection Sign Order Form